

## Snohomish County Assessor's Office

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### Mass Appraisal Report



### Glossary

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#### Definitions:<sup>i</sup>

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<b>Arithmetic Mean</b>	See <b>mean</b>
<b>Assessment Progressivity (Regressivity).</b>	An appraisal <b>bias</b> such that high-value properties are appraised higher (or lower) than low-value properties in relation to market values. See <b>price-related differential</b> .
<b>Assessment-Sale Price Ratio</b>	The ratio of the <b>assessed value</b> to the <b>sale price</b> (or <b>adjusted sale price</b> ) of a property
<b>Average Absolute Deviation</b>	See <b>average deviation</b>
<b>Average Deviation</b>	The arithmetic <b>mean</b> of the absolute deviations of a set of numbers from a measure of <b>central tendency</b> , such as the <b>median</b> . Taking <b>absolute values</b> is generally understood without being stated. The average deviation of the numbers 4, 6 and 10 about their median (6) is $(2+0+4)/3 = 2$ . The average deviations is used in computing the <b>coefficient of dispersion (COD)</b> .
<b>CAMA</b>	See <b>computer-assisted mass appraisal</b>
<b>COD</b>	See <b>coefficient of dispersion</b> .
<b>Coefficient of Dispersion (COD)</b>	The <b>average deviation</b> of a group of numbers from the <b>median</b> expressed as a percentage of the median. In <b>ratio studies</b> , the average percentage deviation from the median ratio.
<b>Coefficient of Variation (COV)</b>	A standard statistical measure of the relative <b>dispersion</b> of the <b>sample</b> data about the <b>mean</b> of the <b>data</b> ; the <b>standard deviation</b> expressed as a percentage of the mean.

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##### **Computer Assisted Mass Appraisal (CAMA)**

A system of appraising **property**, usually only certain types of real property, that incorporates computer-supported statistical analysis such as **multiple regression analysis** and **adaptive estimation procedure** to assist the appraiser in estimating value.

##### **Confidence Interval**

For a given **confidence level**, the **range** within which one can conclude that a measure of the **population** (such as the **median** or **mean** appraisal ratio) lies.

##### **Confidence Level**

The required degree of confidence in a statistical test or **confidence interval**; commonly, 90, 95 or 99 percent. A 95 percent confidence interval would mean, for example, that one can be 95 percent confident that the **population** measure (such as the **median** or **mean** appraisal ratio) falls in the indicated **range**.

##### **COV**

See **Coefficient of variation**.

##### **Geometric Mean**

A measure of **central tendency** computed by multiplying the **values** of all of the **observations** by one another and then taking the result to an **exponent** equal to one divided by the number of observations. The geometric mean is particularly appropriate when a typical rate of change is being calculated such as an inflation rate or a **cost index**.

##### **Harmonic Mean Ratio**

The **reciprocal** of the arithmetic **mean** of the reciprocals of each value in the **data** set. The harmonic mean ratio is less affected by extreme values in the data set than the arithmetic mean or the **geometric mean**.

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#### Histogram

A bar chart or graph of a **frequency distribution** in which the frequencies of the various classes are indicated by horizontal or vertical bars whose lengths are proportional to the number or percentage of **observations** in each class.

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**Market Value**

Market value is the major focus of most real property appraisal assignments. Both economic and legal definitions of market value have been developed and refined. A current economic definition agreed upon by agencies that regulate federal financial institutions in the United States is:

The most probable price (in terms of money) which a property should bring in a competitive and open market under all conditions requisite to a faire sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

The buyer and seller are typically motivated;

Both parties are well informed or well advised and acting in what they consdier their best interests;

A reasonable time is allowed for exposure in the open market;

Payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto;

The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

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<b>Mean</b>	A measure of <b>central tendency</b> . The result of adding all the <b>values</b> of a <b>variable</b> and dividing by the number of values. For example, the mean of 3, 5 and 10 is 18 divided by 3, or 6. Also called arithmetic mean.
<b>Median</b>	A measure of <b>central tendency</b> . The value of the middle item in an uneven number of items arranged or arrayed according to size; the arithmetic average of the two central items in an even number of items similarly arranged; a positional average that is not affected by the size of extreme values.
<b>Neighborhood</b>	(1) The environment of a <b>subject property</b> that has a direct and immediate effect on <b>value</b> . (2) A geographic area (in which there are typically fewer than several thousand properties) defined for some useful purpose, such as to ensure for later <b>multiple regression</b> modeling that the properties are <b>homogeneous</b> and share important locational characteristics.
<b>Percentile</b>	The <b>values</b> that divide a set of <b>data</b> into specified percentages when the data are arrayed in ascending order. The tenth percentile includes the lowest 10 percent of the values, the twentieth percentile includes the lowest 20 percent of the values, and so forth.
<b>PRD</b>	See <b>price-related differential</b> .
<b>Price-Related Differential (PRD)</b>	The <b>mean</b> divided by the <b>weighted mean</b> . The statistic has a slight <b>bias</b> upward. Price-related differentials above 1.03 tend to indicate <b>assessment regressivity</b> ; price-related differentials below 0.98 tend to indicate <b>assessment progressivity</b> .

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<b>Price, Sale</b>	(1) The actual amount of money exchanged for a unit of goods or services, whether or not established in a free and open market. An indicator of <b>market value</b> . (2) Loosely used synonymously with "offering" or "asked" price. <i>Note:</i> The sale price is the "selling price" to the vendor and the "cost price" to the vendee.
<b>Progressivity</b>	(2) See <b>assessment progressivity (regressivity)</b> .
<b>Range</b>	(1) The maximum <b>value</b> of a <b>sample</b> , minus the minimum value. (2) The difference between the maximum and minimum values that a <b>variable</b> may assume.
<b>Regressivity</b>	See <b>assessment progressivity (regressivity)</b> .
<b>Regressivity Index</b>	See <b>price-related differential</b> .
<b>Sale Price</b>	See <b>Price, Sale</b>
<b>Standard Deviation</b>	The <b>statistic</b> calculated from a set of numbers by subtracting the <b>mean</b> from each <b>value</b> and squaring the remainders, adding together all the squares, dividing by the size of the sample less one, and taking the square root of the result. When the <b>data</b> are normally distributed, one can calculate the percentage of <b>observations</b> within any number of standard deviations of the mean from normal probability tables. When the data are not normally distributed, the standard deviation is less meaningful, and one should proceed cautiously.

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##### Variance

A measure of **dispersion** equal to the **standard deviation** squared.

##### Weighted Mean Ratio

Sum of the **appraised values** divided by the sum of the **sales prices**, which weights each value in proportion to its sales price.

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<sup>i</sup> International Association of Assessing Officers , *Glossary for Property Appraisal and Assessment* (Chicago: IAAO, 1997)